



**OFFICE OF STATEWIDE HEALTH PLANNING AND DEVELOPMENT  
FACILITIES DEVELOPMENT DIVISION**

**APPLICATION FOR OSHPD PREAPPROVAL  
OF MANUFACTURER'S CERTIFICATION (OPM)**

OFFICE USE ONLY	
APPLICATION #:	OPM-0268-13

**OSHPD Preapproval of Manufacturer's Certification (OPM)**

**Type:**     New     Renewal     Update to Pre-CBC 2013 OPA Number: OPA-2952-10

**Manufacturer Information**

Manufacturer: Belimed

Manufacturer's Technical Representative: Jay Upchurch

Mailing Address: 2325 Charleston Regional Parkway, Charleston, SC 29492

Telephone: 843-216-7424, x133    Email: jay.upchurch@belimed.com

**Product Information**

Product Name: Small Chamber Steam Sterilizers

Product Type: Steam Sterilizers    OPM-0268-13

Product Model Number: V-446 and V-446E

General Description: Belimed's MST V 446 and V 446E Steam Sterilizers have been engineered to provide the flexibility and versatility needed for immediate use in the OR, day to day operations in a surgery center, or quick turnaround sets in sterile processing.

**Applicant Information**

Applicant Company Name: ISAT Seismic Bracing

Contact Person: William V Joerger

Mailing Address: 1020 Crews Road, Suite Q, Matthews NC 28105

Telephone: 510-714-0216    Email: wvjoerger@isatsb.com

I hereby agree to reimburse the Office of Statewide Health Planning and Development review fees in accordance with the California Administrative Code, 2013.

Signature of Applicant:     Date: September 15, 2015

Title: Principal Structural Engineer    Company Name: ISAT Seismic Bracing

\*Access to Safe, Quality Healthcare Environments that Meet California's Diverse and Dvnamic Needs\*





**OFFICE OF STATEWIDE HEALTH PLANNING AND DEVELOPMENT  
FACILITIES DEVELOPMENT DIVISION**

**Registered Design Professional Preparing Engineering Recommendations**

Company Name: ISAT Seismic Bracing

Name: William V Joerger California License Number: S4545

Mailing Address: 1020 Crews Rd Suite Q, Matthews NC 28105

Telephone: 510-714-0216 Email: wvjoerger@isatsb.com

**OSHPD Special Seismic Certification Preapproval (OSP)**

- Special Seismic Certification is preapproved under OSP- (Separate application for OSP is required)
- Special Seismic Certification is no preapproved

**Certification Method(s)**

- Testing in accordance with:  ICC-ES AC156  FM 1950-10
- Other\* (Please Specify): \_\_\_\_\_

Equipment is considered to be rugged. OPM is for anchorage to concrete slabs.

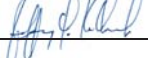
\*Use of criteria other than those adopted by the California Building Standards Code, 2013 (CBSC 2013) for component supports and attachments are not permitted. For distribution system, interior partition wall, and suspended ceiling seismic bracings, test criteria other than those adopted in the CBSC 2013 may be used when approved by OSHPD prior to testing.

- Analysis
- Experience Data
- Combination of Testing, Analysis, and/or Experience Data (Please Specify): \_\_\_\_\_

**List of Attachments Supporting the Manufacturer's Certification**

- Test Report  Drawings  Calculations  Manufacturer's Catalog
- Other(s) (Please Specify): \_\_\_\_\_

**OFFICE USE ONLY – OSHPD APPROVAL VALID FOR CBC 2013 ONLY**

Signature:  Date: 10-28-2015

Print Name: Jeffrey Kikumoto

Title: SSE

Condition of Approval (if applicable): \_\_\_\_\_

"Access to Safe, Quality Healthcare Environments that Meet California's Diverse and Dynamic Needs"





# INTERNATIONAL SEISMIC APPLICATION TECHNOLOGY

A Division of Tomarco Contractor Specialties

**Submittal Documents**

OPM-0268-13

**OSHPD OPM-0268-13**

## **SUPPORT AND ATTACHMENT CONSTRUCTION DRAWINGS FOR BELIMED V446 AND V-446E STERILIZERS**

**BELIMED**

ISAT  
1020 Crews Road Suite Q  
Matthews, N.C. 28105  
704-841-4080



FILE NO.: CLT-0615-088

***"Empowered by Experience"***

REV 2

OSHPD OPM-0268-13 DWG - i

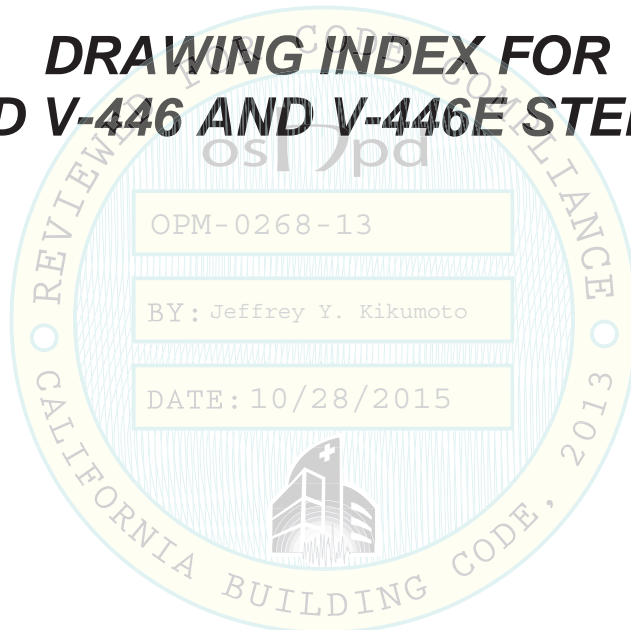


**INTERNATIONAL SEISMIC  
APPLICATION TECHNOLOGY**

A Division of Tomarco Contractor Specialties

**OSHPD OPM-0268-13**

**DRAWING INDEX FOR  
BELIMED V-446 AND V-446E STERILIZERS**



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FILE NO.: CLT-0615-088

***“Empowered by Experience”***

Index Rev 2

OSHPD OPM-0268-13 DWG - ii

## OSHPD OPM-0268-13

MANUFACTURE: BELIMED  
EQUIPMENT TYPE: STERILIZER

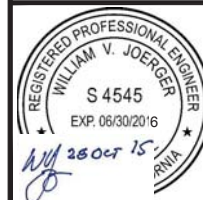
### GENERAL NOTES

1. THIS OSHPD PREAPPROVAL OF MANUFACTURER'S CERTIFICATION (OPM) IS BASED ON THE CBC 2013. THE DEMAND (DESIGN FORCES) FOR USE WITH THIS OPM SHALL BE BASED ON THE CBC 2013.
2. SEISMIC CRITERIA USED:  $S_{DS} = 2.5$   $I_p = 1.5$   $a_p = 1.0$   $R_p = 1.5$  (OTHER MECHANICAL COMPONENT)  $z/h = 0.0$  WITH  $F_pH = 1.13$  AT GRADE OR  $z/h \leq 1.0$  WITH  $F_pH = 3.00$  FOR ELEVATED FLOORS.  $F_pV = 0.50$ .
3. SUPPORT AND ATTACHMENT FORCES ARE DETERMINED USING ASCE 7-10 CHAPTER 13 "SEISMIC DESIGN REQUIREMENTS FOR NONSTRUCTURAL COMPONENTS". AN OVERSTRENGTH FACTOR  $\Omega_0 = 1.5$  IS USED FOR CONCRETE ANCHORAGE FORCES PER ASCE 7-10 SUPPLEMENT 1 TABLE 13.6-1. LOADS SHOWN ARE STRENGTH DESIGN LOADS PER CBC 2013 SECTION 1909A.
4. THIS PREAPPROVAL COVERS ONLY THE SUPPORTS AND ATTACHMENTS OF THE EQUIPMENT TO THE
5. THIS PREAPPROVAL IS FOR CONCRETE SLAB AT GRADE OR ELEVATED SLABS FOR THE DEMAND LOADS SHOWN WHERE  $S_{DS} \leq 2.5$ .
6. STEEL MATERIALS: ANGLES - ASTM A36, THROUGH BOLTS 304 STAINLESS STEEL WITH MATCHING WASHERS AND NUTS, ATTACHMENT BRACKET BY BELIMED EURONORM 1.4301 STAINLESS STEEL WITH A TENSILE STRENGTH OF 520 MPa AND MINIMUM YIELD STRENGTH OF 270 MPa (EQUIVALENT TO 304 SS).
7. CONCRETE SLABS:
  - a. FOR SLAB ON GRADE OR ELEVATED SOLID CONCRETE SLABS: 6" THICKNESS OF NORMAL WEIGHT CONCRETE WITH 3000 PSI MINIMUM STRENGTH.
  - b. METAL DECK: 3" DEEP COMPOSITE STEEL DECK, 20 GAGE MINIMUM WITH FLUTE SPACING OF 12", 4.5 INCH MINIMUM BOTTOM FLUTE WIDTH WITH 3.25" SAND LIGHT WEIGHT OR NORMAL WEIGHT CONCRETE COVER AT 3000 PSI MINIMUM STRENGTH.
  - c. EDGE DISTANCE IS TO BE 12 INCHES MINIMUM.
8. RETROFIT CONCRETE ANCHORS: HILTI KWIK BOLTS TZ (ESR-1917) STAINLESS STEEL 0.50" DIAMETER x 4" HOLE DEPTH (3.25" EFFECTIVE EMBEDMENT) AND 40 FT-LBS INSTALATION TORQUE.

OPM-0268-13 BELIMED V446 STERILIZER GENERAL NOTES



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<b>SCALE</b> N.T.S.	<b>PAGE</b> GEN NOTES
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**OSHPD OPM-0268-13**

MANUFACTURE: BELIMED

EQUIPMENT TYPE: STERILIZER

**ATTACHMENT NOTES:**

1. REFER TO OPM-0268-13 DETAILS FOR THE MATERIALS OF CONSTRUCTION AND FASTENER DIMENSIONS.
2. THROUGH BOLT INSTALLATION AND INSPECTION (DETAILS OF THE SUPPLEMENTAL STEEL AND CONNECTIONS TO STRUCTURE ARE SHOWN ON PAGE "MISC STEEL".)
  - a. THROUGH BOLTS ARE TO BE TORQUED BY 3/4 TURN OF THE NUT AFTER SNUG TIGHT CONDITION IS ACHIEVED. SNUG TIGHT CONDITION IS DEFINED AS THE THIGHTNEE REQUIRED TO BRING THE CONNECTED PLIES INTO FIRM CONTACT.
  - b. THROUGH BOLT HOLES SHALL BE 1/16" LARGER THAN THE BOLT SIZE (HOLE SIZE = BOLT SIZE + 1/16") FOR BOTH THE STEEL AND CONCRETE.
  - c. THROUGH BOLTS WITH STEEL-TO-STEEL CONNECTION IN TENSION DO NOT REQUIRE TESTING.
3. FOR POST INSTALLED CONCRETE ANCHORS PERIODIC SPECIAL INSPECTION SHALL BE IN ACCORDANCE WITH CBC 2013 SECTION 1705A AND TABLE 1705A.3 INCLUDING VERIFICATION OF ANCHOR TYPE, ANCHOR DIMENSIONS, CONCRETE TYPE, CONCRETE COMPRESSIVE STRENGTH, ANCHOR SPACING, EDGE DISTANCES, CONCRETE MEMBER THICKNESS, TIGHTENING TORQUE, HOLE DIMENSIONS, ANCHOR EMBEDMENT AND ADHERENCE TO THE MANUFACTURER'S PRINTED INSTALLATION INSTRUCTIONS. IN ADDITION, FOLLOW THE PROVISIONS OF THE 2013 CALIFORNIA BUILDING CODE SECTION 1913A.7.2 BY CONFIRMING THE INSTALLATION TORQUE SPECIFIED BY THE MANUFACTURER. TESTING IS NOT TO OCCUR UNTIL A MINIMUM OF 24 HOURS HAS ELAPSED AFTER THE INSTALLATION OF THE SUBJECT ANCHORS. TESTING SHALL BE DONE IN THE PRESENCE OF THE SPECIAL INSPECTOR. TEST 50% OF THE ANCHORS FOR EACH PIECE OF EQUIPMENT. USING A CALIBRATED TORQUE WRENCH VERIFY THE INSTALLATION TORQUE IS OBTAINED WITHIN 1/2 TURN OF THE NUT. A REPORT OF TEST RESULTS IS TO BE SUBMITTED TO THE ENFORCEMENT AGENCY. THE SEOR SHALL PROVIDE REMEDIAL ANCHORAGE DETAILS IN THE EVENT THAT AN ANCHOR FAILS TO MEET THE TEST REQUIREMENTS.
4. EXERCISE DUE CARE WHEN DRILLING POST-INSTALLED ANCHORS TO AVOID DAMAGING CONCRETE REINFORCEMENT OR TENDONS.
5. PROVIDE FOR FULL THREAD ENGAGEMENT OF NUT AND WASHER.

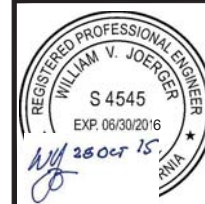
**RESPONSIBILITIES OF THE STRUCTURAL ENGINEER OF RECORD**

1. CONFIRM THE MINIMUM REQUIREMENTS FOR THE CONCRETE SLAB ARE MET.
2. PROVIDE A PLAN FOR INSPECTION OF SUPPORTS AND ATTACHMENTS AND VERIFY ITS IMPLEMENTATION.
3. VERIFY THAT THE EXISITNG STRUCTURE IS ADEQUATE FOR THE IMPOSED DEAD, LATERAL AND TENSION FORCES SHOWN IN ADDITION TO ALL OTHER LOADS.
4. VERIFY THAT THE INSTALLATION IS IN CONFORMANCE WITH CBC 2013 AND WITH THE OPM-0268-13 DETAILS.
5. VERIFY THAT THE PROJECT SPECIFIC  $S_{ps}$  AND  $z/h$  VALUES RESULT IN SEISMIC FORCES ( $E_h$  AND  $E_v$ ) DO NOT EXCEED THE VALUES SHOWN IN THESE DETAILS.

OPM-0268-13 BELIMED V446 STERILIZER ATTACHMENT NOTES



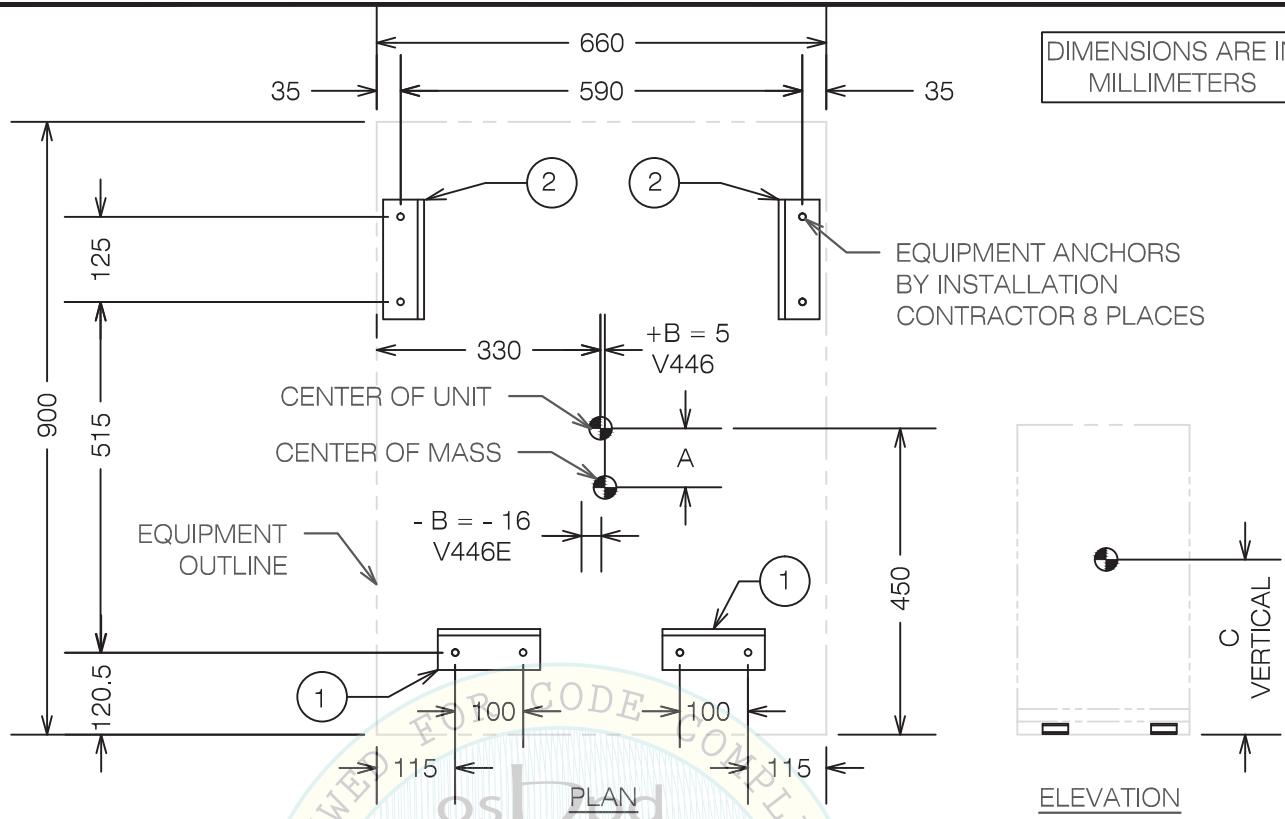
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DIMENSIONS ARE IN MILLIMETERS



- ① 446 SEISMIC BRACKET (100mm) BY BELIMED TYPICAL OF 2 (304 SS) WITH 0.55" DIA. HOLES
- ② 446 SEISMIC BRACKET (125mm) BY BELIMED TYPICAL OF 2 (304 SS) WITH 0.55" DIA. HOLES

BY: Jeffrey Y. Kikumoto

Model	Mass kg	Vertical Ecc mm	A mm	B mm	C mm	Max Anchor Forces at Grade		Max Anchor Forces at Elevated	
						Tu - Lbs	Vu - Lbs	Tu - Lbs	Vu - Lbs
V446	438	1035	95	5	1035	1188	204	2193	543
V446E	505	960	87	-16	960	1265	235	2341	626

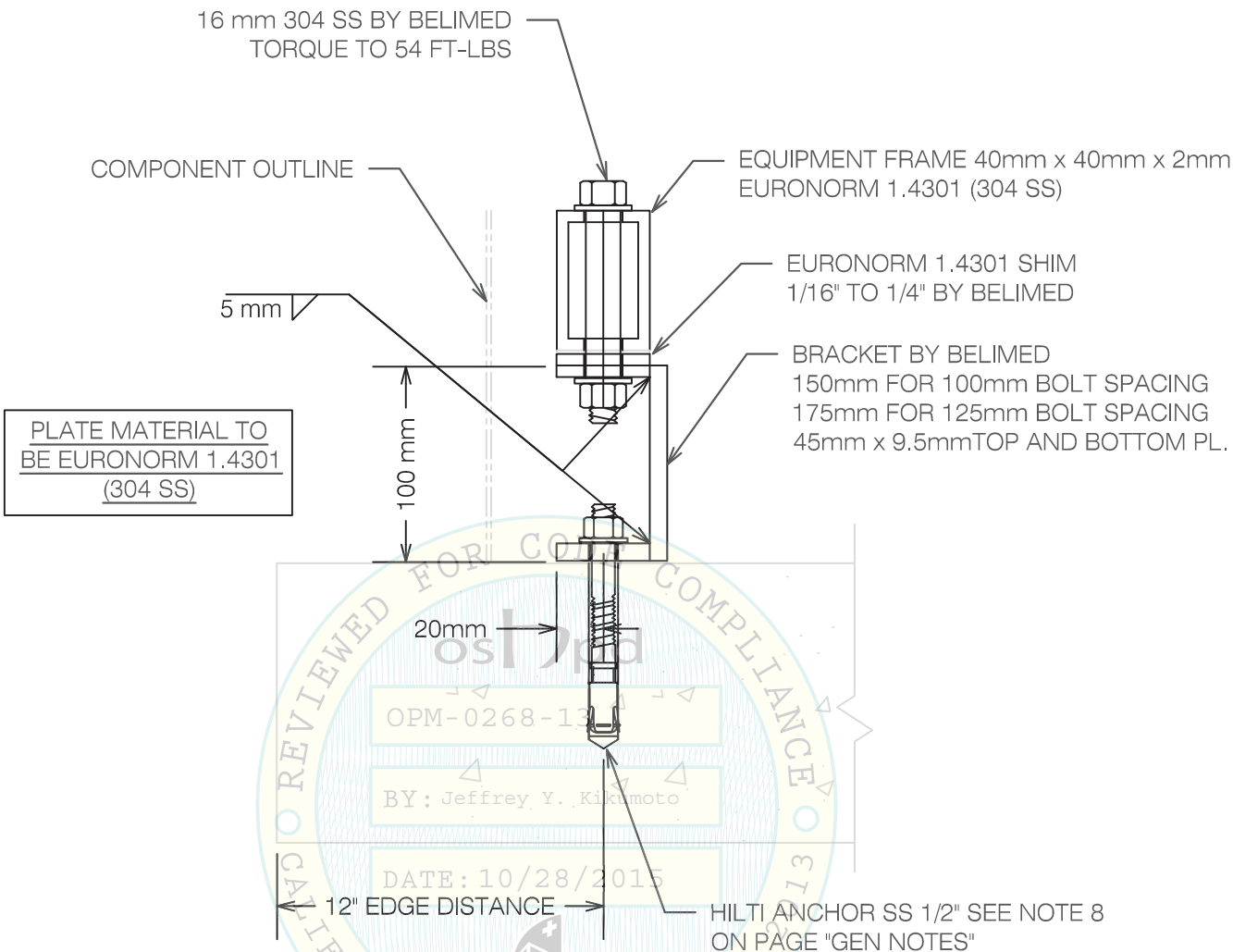
1. Tu AND Vu VALUES INCLUDE AN OVERSTRENGTH FACTOR OF 1.5 IN ACCORDANCE WITH ASCE 7-10 SUPPLEMENT No. 1.
2. FOR INTERACTION CHECKS THE CALCULATED ANCHOR CAPACITY HAS BEEN MULTIPLIED BY 0.75 TO ACCOUNT FOR THE CONCRETE ANCHORAGE CAPACITY REDUCTION FROM ACI 318-11 SECTION D3.3.4.4.

OPM-0268-13 BELIMED V-446 AND V-446E ANCHOR LAYOUT AND FORCES

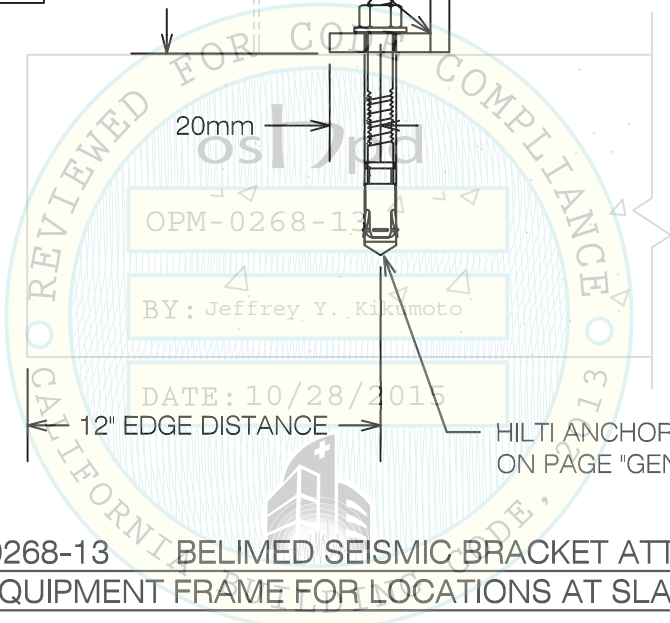



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	SCALE N.T.S.	PAGE V446 LAYOUT




OPM-0268-13 BELIMED SEISMIC BRACKET ATTACHMENT TO THE EQUIPMENT FRAME FOR LOCATIONS AT SLAB-ON-GRADE

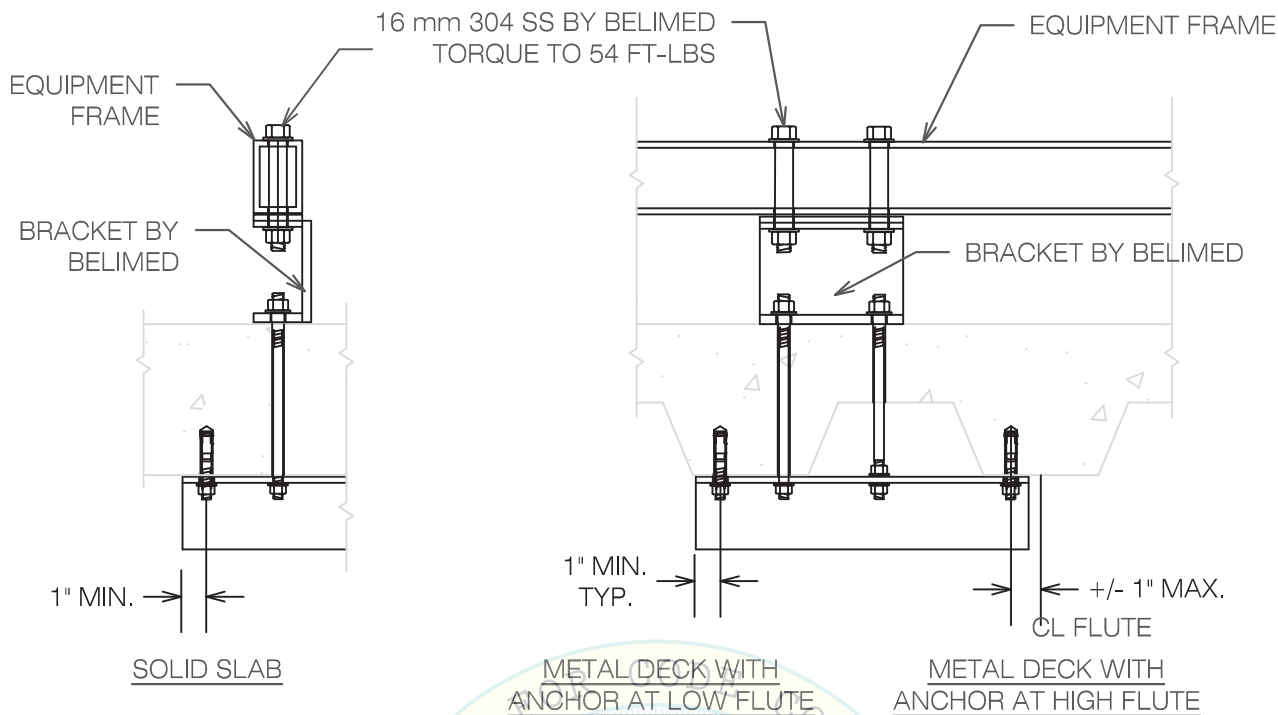




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**NOTES:**

1. DRILL 9/16" HOLE IN THE CONCRETE SLAB TO RECEIVE THE 1/2" AISI 304 STAINLESS STEEL RODS WITH MATCHING WASHERS AND NUTS.
2. SUPPLEMENTAL ANGLE SHALL BE L3x3x1/4 ASTM A36. DRILL 9/16" HOLES IN ANGLE FOR BOLTS. FOR LOCATIONS WHERE A TOP NUT CANNOT BE INSTALLED, DRILL AND TAP THE ANGLE TO RECEIVE THE 1/2" EQUIPMENT ANCHORAGE BOLT.
3. ANCHOR INTO BOTTOM OF SLAB SHALL BE HILTI KWIK BOLT TZ (ESR-1917) 1/2" x 3 1/4" HOLE DEPTH (2" EFFECTIVE EMBEDMENT) AND 40 FT-LBS INSTALLATION TORQUE.
4. SEE PAGE "GEN NOTES" NOTE 7 FOR CONCRETE SLAB AND METAL DECK REQUIREMENTS.
5. EQUIPMENT FRAME IS 40mm x 40mm x 2mm EURONORM 1.4301.

**OPM-0268-13 BELIMED V-446 AND V-446E MISCELLANEOUS STEEL AND ATTACHMENT DETAILS AT ELEVATED SLABS**



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		N.T.S.
		MISC. STEEL

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